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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
NGUYEN, HAU H

ART UNIT	PAPER NUMBER
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on February 13, 2007 has been entered.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

3.   Claims 1-3, 5, 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Beyers, Jr. et al. (U.S. Patent No. 5,534,942, Beyers, hereinafter) in view of Knox et al. (U.S.

Patent No. 6,351,292, Knox, hereinafter).

As per claim 1, Beyers teach an image processing apparatus (Fig. 1), comprising:

an image memory (video RAM 1513) including a first memory area (1513-1, Fig. 2) to store a

first image group of a first image for a background (video data) (col. 4, lines 60-66), and a

second memory area (1513-3) for storing a second image data group of a second image for an

on-screen display (OSD bitmap 1513-3) (col. 5, lines 47-52);

Beyers also teach the first image data (video data) and the second image data (OSD data)

read from the image memory (video RAM 1513) converted into a format to be displayed on a

display screen (col. 6, line 58 through col. 7, line 34). As also in Fig. 2, video data and OSD data are *separately* retrieved from the video RAM to be *separately* processed by the video display unit 1509-5, and the OSD display unit 1509-9, respectively. Thus, in the configuration as shown in Fig. 2, the memory controller 1509-3 (control section) reading the image data group from the first memory area 1513-1, and reading the second image data group from the second memory area 1513-3 *without intervening with any other memory area or buffer memory.*

Beyers fails to explicitly teach writing the first image data group and the second image data group in a display buffer. However, Beyers teach *in a "superimpose" mode of operation, in which the graphic image is inserted within a video image, output multiplexer 1509-13 selects either the video image groups or the graphic image groups on a pixel by pixel basis* (col. 7, lines 48-62). Thus, Beyers implicitly teach a display buffer in the multiplexer to store the first image group and the second image group to temporarily store video data and OSD data so as to correctly insert the OSD data at the assigned positions on the display screen.

Beyers fails to teach the control section includes a data expansion control section capable of selectively increasing a data amount of only the second image data group read from the image memory, according to the second image data group. However, this is what Knox teach. The teachings of Knox was given in the previous Office Action. In particular, Knox teach the OSD data is independent of the size and location of the active video area. Knox teach the line double mode for OSD data on col. 1, lines 49-65, wherein OSD messages are generated, OSD unit receives "x" lines of OSD data, and, in turn, displays "2x" lines of OSD data. Knox also teach the memory various frame buffers for storing frames of images and a display buffer for storing decoded images (col. 3, lines 4-10).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

invention was made to modify Beyers with the feature "line doubling mode where each OSD line

is repeated" as taught by Knox because it reduces the OSD bitstream size to be reduced resulting

in lower bandwidth requirements.

Regarding claims 2 and 3, Beyers does not disclose data expansion control section

including a magnification control for magnifying the OSD data. Knox et al. discloses OSD data

magnification utilizing the "line doubling mode" (col. 5, lines 30-67). Therefore, it would have

been obvious to a person of ordinary skill in the art at the time invention was made to modify

Beyers with method as taught by Knox et al. because it reduces the OSD bitstream size to be

reduced resulting in lower bandwidth requirements.

Regarding claim 5, although not explicitly taught by Beyers, Knox, as cited above, teach

RAM 140 includes frame buffers for storing frames of images, thus, implying that the magnified

second image data (OSD data) is stored in the frame buffer. Therefore, it would have been

obvious to one skilled in the art to utilize the method of storing displayed frame in the frame

buffer as taught by Knox in combination with the method as taught by Beyers such that both

video data and OSD data reconstructed in the frame buffer are readily available for display.

As per claims 10 and 11, Beyers discloses OSD display unit 1509-9 (Fig. 2) converting

the four-bit graphic image component representative words to eight-bit words by adding four

binary "0s" as the least four significant bits to the four-bit words thereby increasing a number of

bits of the second image data group (OSD data) (col. 6, lines 53-65); storage of such converted

data into display buffer memory as cited above.

As per claim 12, Beyers teach the first processing to add data "0" to low-order bits of the second image data group... as cited above with reference to claim 11. Beyers also teach a second processing of smoothing processing to equalize the difference between data obtained from the first processing, the data being adjacent to each other on a display screen (*...the video image...groups correspond to two pixels...the 4:2:0 image...groups are converted to...by interpolation within video display unit 1509-5*...col. 5, lines 22-46).

As per claim 13, Beyers teach the bit converter section including a display information table containing a large number of display information items (such as color information) and address information items indicating addresses at which the display information items are respectively stored (where in the OSD storage 1513-3 in RAM 1531 the graphics component is stored) (col. 5, line 53 to col. 6, line 31), and

the second image data group includes a display position specifying information to specify a display position on the display screen and the address information (col. 4, lines 25-34).

As per claim 14, Beyers teach the display information table in rewritable (since *the colors of a graphics image may be changed by changing the four bits of one of more component representing words of the header, depending on the nature of the graphics image to be displayed* col. 6, lines 34-37).

As per claims 15 and 16, as cited above, Beyers teach the display information items are information items regarding colors to be displayed.

Claim 17, which is similar in scope to claim 1 above, is thus rejected under the same rationale.

Claim 18, which is similar in scope to claim 3 above, is thus rejected under the same

rationale.

4.   Claims 4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beyers,

Jr. et al. (U.S. Patent No. 5,534,942) in view of Knox et al. (U.S. Patent No. 6,351,292), and

further in view of Shibamiya et al. U.S. Patent No. 5,926,174).

Regarding claim 4, Beyers-Knox combination is silent about wherein magnification

control section adds a new data group obtained by conducting a linear interpolation for the

second image data group to the second image data group. However, Shibamiya et al. discloses

OSD (on-screen display) operations for displaying necessary information on the display unit 15

for facilitating various adjustments by the operator making use of interpolation circuit 125 *(...the*

linear interpolation...the image data of the interpolated pixel is determined from the image data

of the pixels on both sides of the interpolated pixel...col. 14, lines 20-30...the OSD data 118 is

enlarged in a doubled size...the data is then enlarged into a doubled size...by the interpolation

*circuit 125...*col. 23, lines 60-67; col. 24, lines 1-60). Therefore, it would have been obvious to

a person of ordinary skill in the art at the time invention was made modify Beyers-Knox

combination with the feature "linear interpolation for OSD data" as taught by Shibamiya et al.

because it provides a more flexible OSD data display with different font size selection as per user

input.

Claim 19, which is similar in scope to claim 4, is thus rejected under the same rationale.

5.   Claims 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beyers,

Jr. et al. (U.S. Patent No. 5,534,942) in view of Knox et al. (U.S. Patent No. 6,351,292), and

further in view of Suga et al. (U.S. Patent No. 6,215,4674).

Regarding claims 6, 7 and 9, Beyers-Knox combination does not disclose wherein the

first image data group is magnified using a circuit included in the magnification control section.

Suga et al. discloses a display control having a plurality of different display modes, and where

OSD data is displayed according to different font sizes, shapes (...*appropriately display OSD*

data in correspondence with display states with different image resolutions...driving conditions

differences in various display modes can be absorbed, and the OSD data can be stably

displayed...OSD data having a font size...corresponding to the enlarged or reduced size is used

to maintain a desired size and shape...a plurality of types of image signals corresponding to

different resolutions...OSD display operations matching the respective display modes can be

attained...col. 1, lines 50-67; col. 2, lines 5-41). However, Suga et al. discloses background

image being capable of being magnified as well as the OSD image (...*processing in the case of*

640 dots...as one display mode of a VGA...the horizontal...pixel period is sampled 1,280 times to

enlarge the horizontal dots to 1,280 dots...2-line enlargement is performed...800 dots...VESA

standard...col. 16, lines 1-60...Figs. 26A and 26B which show control for enlarging the

character size in the display control apparatus...col. 19, lines 4-10; lines 45-60). Therefore, it

would have been obvious to a person of ordinary skill in the art at the time invention was made

to modify the Beyers-Knox combination with the feature "OSD-Background image

magnification capabilities" as taught by Suga et al. because it provides for a more flexible

display arrangement of background and OSD data.

6.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beyers, Jr. et al.

(U.S. Patent No. 5,534,942) in view of Knox et al. (U.S. Patent No. 6,351,292), further in view

of Shibamiya et al. U.S. Patent No. 5,926,174), and further in view of Suga et al. (U.S. Patent

No. 6,215,4674).

As per claim 8, as applied to claim 4 above, the combination Beyers-Knox-Shibamiya

teach all the limitations of claim 8, except for the magnification control section includes a circuit

for also magnifying the first image data group. However, as cited above with reference to claim

6, Suga teaches this feature.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

invention was made to modify the Beyers-Knox-Shibamiya combination with the feature "OSD-

background image magnification capabilities" as taught by Suga et al. because it provides for a

more flexible display arrangement of background and OSD data.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The

examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-

8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H. Nguyen

4/18/2007

KEE M. TUNG
SUPERVISORY PATENT EXAMINER